IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of: Docket No.: 2814-G

M. Patricia Beckmann and Douglas P. Cerretti

Serial No.: --to be assigned--

Filing Date: July 12, 2001

For: CYTOKINES THAT BIND THE CELL SURFACE RECEPTOR HEK

For Prior Application

Examiner: P. Mertz
Art Unit: 1646

PRELIMINARY AMENDMENT

BOX PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please amend the above-captioned application as follows, prior to examination thereof:

In the Specification:

This application is divisional of application Serial No 09/358,734, filed July 21, 1999, currently allowed, which is a divisional of application Serial No 09/057,121, filed April 8, 1998, now U.S. Patent 5,969,110, which is a divisional of application Serial No. 08/453,943, filed May 30, 1995, now U.S. Patent 5,738,844, which is a divisional of application Serial No. 08/240,124, filed May 9, 1994, now U.S, Patent 5,516,658, which is a continuation-in-part of application Serial No. 08/161,132, filed December 3, 1993, now abandoned, which is a continuation-in-part of application Serial No. 08/114,426, filed August 30, 1993, now abandoned, which is a continuation-in-part of application Serial No. 08/109,745, filed August 20, 1993, now abandoned,

In the Claims:

Please cancel claims 2, 4, 6 and 16-27 without prejudice.

Amend claims 7 and 15 as follows:

7. (amended) An isolated DNA encoding a fusion protein comprising a hek-L polypeptide that binds hek, and an Fc polypeptide, wherein said hek-L comprises an amino acid sequence that is at least 80% identical to a sequence selected from the group consisting of amino acids 1-202 of SEQ ID NO:2 and amino acids 1-160 of SEQ ID NO:4.

15. (amended) A process for preparing a fusion protein, comprising culturing a host cell transformed with a vector according to claim 11 under conditions promoting expression of said fusion protein, and recovering said fusion protein from the culture.

Add new claims 28-39, as follows:

--28. A method for binding hek, comprising contacting a hek polypeptide with a hek ligand (hek-L) polypeptide, wherein said hek-L polypeptide is selected from the group consisting of:

a) the hek-L protein of SEQ ID NO:2 in mature form;

b) a fragment of the hek-L protein of SEQ ID NO:2;

c) the hek-L protein of SEQ ID NO:4 in mature form; and

d) a fragment of the hek-L protein of SEQ ID NO:4;

wherein said fragment binds hek.

29. A method according to claim 28, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:2.

30. A method according to claim 28, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:4.

31. A method according to claim 28, wherein said hek polypeptide, or said hek-L polypeptide, or both, is expressed on a cell.

32. A method according to claim 28, wherein said hek-L is in the form of an oligomer comprising at least two of said hek-L polypeptides.

33. A method according to claim 28, wherein said hek-L is attached to a diagnostic or therapeutic agent.

34. A method for binding elk, comprising contacting an elk polypeptide with a hek-L polypeptide, wherein said hek-L polypeptide is selected from the group consisting of:

a) the hek-L protein of SEQ ID NO:2 in mature form;

b) a fragment of the hek-L protein of SEQ ID NO:2;

c) the hek-L protein of SEQ ID NO:4 in mature form; and

d) a fragment of the hek-L protein of SEQ ID NO:4;

wherein said fragment binds hek.

35. A method according to claim 34, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:2.

36. A method according to claim 34, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:4.

37. A method according to claim 34, wherein said elk polypeptide, or said hek-L polypeptide, or both, is expressed on a cell.

38. A method according to claim 34, wherein said hek-L is in the form of an oligomer comprising at least two of said hek-L polypeptides.

39. A method according to claim 34, wherein said hek-L is attached to a diagnostic or therapeutic agent.--

REMARKS

This amendment is submitted to place the application in better condition for examination, and to present claims directed to particular embodiments of the invention. No new matter is introduced by this amendment.

The amendments to page one of the specification are made to update information pertaining to related applications.

Each new and amended claim is supported by the application as originally filed. Support for amended claim 7 is found on page 8, lines 5-15.

New claims 28-39 are supported by the present specification as filed, on page 3, lines 5-23; page 11, line 30, to page 14, line 22; page 15, lines 13-21; example 5, and the abstract.

Claims 1, 3, 5, 7-15 and 28-39 are now pending in the subject application.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made".

Respectfully submitted

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In the claims:

Please cancel claims 2, 4, 6 and 16-27 without prejudice.

7. (amended) An isolated DNA encoding a fusion protein comprising a hek-L polypeptide that binds hek, and an Fc polypeptide, wherein said hek-L comprises an amino acid sequence that is at least 80% identical to a sequence selected from the group consisting of amino acids 1-202 of SEQ ID NO:2 and amino acids 1-160 of SEQ ID NO:4.

15. (amended) A process for preparing a ~~hek-L polypeptide~~ fusion protein, comprising culturing a host cell transformed with a vector according to claim 11 under conditions promoting expression of ~~hek-L~~ said fusion protein, and recovering said fusion protein ~~the hek=L polypeptide~~ from the culture.

APPENDIX A
2814-G Pending Claims

1. An isolated DNA encoding a hek-L protein capable of binding hek, wherein said DNA comprises a nucleotide sequence that is at least 80% identical to a sequence selected from the group consisting of nucleotides 83-796, 83-745, 140-796, and 140-745 of SEQ ID NO:1.

3. An isolated DNA encoding a hek-L protein capable of binding hek, wherein said DNA comprises a nucleotide sequence that is at least 80% identical to a sequence selected from the group consisting of nucleotides 28-630, 28-573, 94-630, and 94-573 of SEQ ID NO:3.

5. An isolated DNA encoding a human hek-L protein capable of binding hek, wherein said hek-L comprises an amino acid sequence that is at least 80% identical to a sequence selected from the group consisting of amino acids 1-202 and 1-219 of SEQ ID NO:2 and amino acids 1-160 and 1-179 of SEQ ID NO:4.

7. An isolated DNA encoding a fusion protein comprising a hek-L polypeptide that binds hek, and an Fc polypeptide, wherein said hek-L comprises an amino acid sequence that is at least 80% identical to a sequence selected from the group consisting of amino acids 1-202 of SEQ ID NO:2 and amino acids 1-160 of SEQ ID NO:4.

8. An expression vector comprising a DNA according to claim 1.

9. An expression vector comprising a DNA according to claim 3.

10. An expression vector comprising a DNA according to claim 5.

11. An expression vector comprising a DNA according to claim 7.

12. A process for preparing a hek-L polypeptide, comprising culturing a host cell transformed with a vector according to claim 8 under conditions promoting expression of hek-L, and recovering the hek-L polypeptide from the culture.

13. A process for preparing a hek-L polypeptide, comprising culturing a host cell transformed with a vector according to claim 9 under conditions promoting expression of hek-L and recovering the hek-L polypeptide from the culture.

14. A process for preparing hek-L polypeptide, comprising culturing a host cell transformed with a vector according to claim 10 under conditions promoting expression of hek-L, and recovering the hek-L polypeptide from the culture.

15. A process for preparing a fusion protein, comprising culturing a host cell transformed with a vector according to claim 11 under conditions promoting expression of said fusion protein, and recovering said fusion protein from the culture.

28. A method for binding hek, comprising contacting a hek polypeptide with a hek ligand (hek-L) polypeptide, wherein said hek-L polypeptide is selected from the group consisting of:

a) the hek-L protein of SEQ ID NO:2 in mature form;

b) a fragment of the hek-L protein of SEQ ID NO:2;

c) the hek-L protein of SEQ ID NO:4 in mature form; and

d) a fragment of the hek-L protein of SEQ ID NO:4;

wherein said fragment binds hek.

29. A method according to claim 28, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:2.

30. A method according to claim 28, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:4.

31. A method according to claim 28, wherein said hek polypeptide, or said hek-L polypeptide, or both, is expressed on a cell.

32. A method according to claim 28, wherein said hek-L is in the form of an oligomer comprising at least two of said hek-L polypeptides.

33. A method according to claim 28, wherein said hek-L is attached to a diagnostic or therapeutic agent.

34. A method for binding elk, comprising contacting an elk polypeptide with a hek-L polypeptide, wherein said hek-L polypeptide is selected from the group consisting of:

a) the hek-L protein of SEQ ID NO:2 in mature form;

b) a fragment of the hek-L protein of SEQ ID NO:2;

c) the hek-L protein of SEQ ID NO:4 in mature form; and

d) a fragment of the hek-L protein of SEQ ID NO:4;

wherein said fragment binds hek.

35. A method according to claim 34, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:2.

36. A method according to claim 34, wherein said hek-L polypeptide is a purified soluble fragment of the hek-L protein of SEQ ID NO:4.

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